GLOSSARY

CHAPTER 31

(FILE NAME ON DISK # 3 = S4C31.WPD)

A

A.B.A. (American Bankers Association) – A national organization consisting of the voluntary association of banks and other bank organizations.

A.B.A. number – A code number identifying state and federal commercial banks used as an aid in routing unpaid checks in transit. Numerator is assigned A.B.A. number; denominator is transit routing symbol.

Example:
$$\frac{\text{A - B}}{\text{C D E}}$$

A) 1-49 major city
   50-101 state or territory
B) Bank number
C) Federal Reserve district
D) 2-5 branch of Federal Reserve office
   6-9 special collection code
E) Payment availability of 1-9 state or federal office

absolute address – See address, absolute.

absolute coding – Coding that uses machine instructions and absolute addresses. It can be executed directly by a computer without prior translation to a different form. Contrast with symbolic coding.

ACH (Automated Clearing House) – A nationwide electronic payment system among financial institutions. ACH entries can be substituted for checks in recurring payments, such as mortgages, or direct deposits, such as federal and corporate benefits payments, including Social Security payments. In an ACH debit entry, the originator *receives* funds; in an ACH credit entry, the originator *pays* funds. Final settlement is made, generally one or two days after transactions are deposited at the processor through reserve accounts at Federal Reserve banks.

access control list – A list of entities, together with their access rights, that are authorized to have access to a resource.

access method – Technique and/or program code for moving data between main storage and input/output devices.

access mode – A technique used to obtain a specific record from, or to place a specific record into, a file. See also *random access* and *serial access*.

access time – The amount of time required for a computer to locate and transfer a character of data from its storage position and make it available for processing, or to return a character from the processing unit to the storage location.

account – A record of all financial transactions and their dates affecting a particular phase of the business expressed in debits and credits, evaluated in money, and showing the current balance, if any (the excess of debits over credits, or the excess of credits over debits).

accounting controls – Controls concerned with the safeguarding of assets and the reliability of financial records.

account number – The numerical identification number assigned to an account within a given instruction or business. See also *code of accounts*.

accumulator – A device, area or register in a computer for temporary storage of data in an arithmetic or logic operation, and temporary storage of the result.

acoustical coupler – Data communications device that converts electrical data signals to/from tones for

transmission over a telephone line using a conventional telephone handset.

actual address – Same as *address, absolute*.

activity – The degree of frequency with which individual records in a file are used, modified or referred to. For example, an "activity factor" of 0.10 (or 10 percent) denotes that an average of one out of every 10 master file records is referenced or affected by a transaction during a run.

address – The specific location where data is stored in a computer system. A symbolic (numerical or alphabetical) designation of the storage location of the data or machine unit to be used.

address, absolute – A fixed location in the computer's memory which has been assigned to a particular internal storage location. Synonymous with *actual address* or *absolute address*.

address, relative – A memory address that represents some distance from a starting point (base address), such as the first byte of a program or table. The absolute address is derived by adding the relative address to the base address.

address, symbolic – A label to identify a particular location, function or other information in a routine independent of the relative or absolute location of the information in the routine, used for the convenience of the programmer.

advices – The term "advices" connotes several types of forms used in the banking field. Generally speaking, an advice is a form of letter that relates or acknowledges certain activity between a depositor and a financial institution. Examples are credit advice, debit advice, advice of payment, and advice of execution.

algorithmic – Refers to a specific set of defined rules of processes for the solution of a problem in a finite number of steps. Contrast with *heuristic*.

allocate – To assign storage locations to the main routines and subroutines. To fix the absolute machine locations for symbolic addresses.

alphanumeric – A character set that includes both alphabetic characters (letters) and numeric characters (digits). Note: May also contain special characters (dollar signs, commas, etc.).

analog – The use of variable and continuous wave-forms to represent information values. See *digital*.

analyst – Person who analyzes and defines business problems and develops computer systems and procedures for their solution.

ancillary – See *auxiliary equipment*.

application – A computer program or set of programs that perform the processing of records for a specific business function, such as demand deposits (DDA), installment loans, mortgages, etc.

application controls – Input, processing and output controls relating to a specific application.

application layer – A logical entity of the open systems interconnection (OSI) model; the top of the seven-layer structure, generally regarded as offering an interface to, and largely defined by, the network user; in IBM's Systems Network Architecture (SNA), the end-user layer.

application program interface (API) – System software that provides resources on which programmers can draw to create user interface features, such as pull-down menus and windows, and to route programs to local area networks (LANS).

application programmer – One who designs, develops, debugs, maintains, and documents computer application programs using various computer languages (COBOL, RPGII, BASIC).

applications server – Runs applications and retrieves information from databases.

application system – A collection of programs and documentation relevant to an application.

ARU (Audio Response Unit) – A device that provides voice response to coded signals.

ASCII (American Standard Code for Information Interchange) – A 7-or 8-bit compatible USA standard code adopted to facilitate the interchange of data among various types of data processing and data communications equipment. See also *EBCDIC*.

assemble – To prepare a machine-language program from a program written in symbolic coding by

substituting absolute operation codes for symbolic operation codes and absolute or relocatable addresses for symbolic addresses. For example, the symbolic instruction ADD TAX might be assembled into the machine instruction 24 1365, where 24 is the operation code for addition and 1365 is the address of the storage location labeled TAX. Same as *compile*.

assembler – A computer program that assembles programs written in symbolic coding into machine-language programs. Note: Assemblers are an important part of the basic software for most computers.

asynchronous communications – A method of data communication in which the transmission of bits of data is not synchronized by a clock signal, but is accomplished by sending the bits one after another, with a start bit and a stop bit to mark the beginning and end of each data unit. Asynchronous communications comes into play when you have only two wires. This form of transmission can be compared to sending eight cars, one after the other, down a one-lane road, with a motorcycle policeman at the beginning and end of the procession. See *synchronous communications*.

audit function – Periodic or continuous verification of the bank's financial records, e.g. assets, liabilities, income, and expenses. This function is performed by the auditor (see definition). The auditor is appointed by the board of directors, and is responsible for carrying out this verification. Among the assets and liabilities more regularly verified are cash, loans, collateral for loans, and savings and checking accounts. Verification may consist of a physical count of the assets as reflected by the general ledger or listing of the balances as shown on each savings or checking account with proof of the total as shown on the general ledger. Direct verification may also be made with borrowers or depositors.

auditor – An officer who is in charge of all audit functions (see definition) and directly responsible to the board of directors.

audit trail – A means of identifying actions taken in processing input data or in preparing an output such that data on a source document can be traced forward to an output (a report, for example) and an output can be traced back to the source items from which it is derived. Note: The audit trail can also be termed an inquiry trail or a management trail, because it is used as a reference trail for internal operations and management, as well as for audit tests.

authenticate – To establish the validity of a claimed identity, usually with a password.

authentication – The process of proving the claimed identity of an individual user, machine, software component or any other entity. Typical authentication mechanisms include conventional password schemes, one-time passwords, biometrics devices, and cryptographic methods.

AUTOEXEC.BAT – A batch file whose main purpose is to process commands that set up the operating system for DOS. It is automatically carried out whenever the computer is stared or restarted. The file contains basic start up commands that help configure the system.

automated system log – A report in which job-related information, operational data, descriptions of unusual occurrences and commands, and messages to or from the operator are listed automatically.

automatic route selection (ARS) – The capability of a switch, typically a private branch exchange (PBX), to automatically determine an optimal route for establishing a circuit; also called least-cost routing (LCR).

auxiliary equipment – Equipment not under direct control of the central processing unit. See *peripheral equipment*.

auxiliary storage – Storage that supplements a computer's primary internal storage. Note: In general, auxiliary storage has a much larger capacity, but a longer access time, than primary storage. Synonymous with *mass storage*. Same as *secondary storage*.

B

backbone network – A term that describes a transmission facility, or an arrangement of such facilities, designed to interconnect lower-speed distribution channels or clusters of dispersed users of devices.

backup – Equipment or procedures that are available for use in the event of failure or overloading of regularly used equipment or procedures. Note: The provision of adequate backup facilities is important to the design of all information processing systems especially real-time systems, where a system failure may bring the total operations of a business to a standstill.

BAI – Bank Administration Institute.

band – (1) A cylindrical area on a magnetic drum; (2) Range of frequency between two defined limits.

bandwidth – The transmission capacity of a computer channel, communications line, or bus. It is expressed in cycles per second (Hertz), the bandwidth being the difference between the lowest and highest frequencies transmitted. The frequency is equal to or greater than the bits per second. Bandwidth is also often stated in bits or bytes per second. In local area networks, bandwidth is a measurement of network speed. In monitors, bandwidth is a measurement of the monitor's maximum resolution; the higher the bandwidth, the more dense the resolution on-screen.

batch – A group of transactions, deposits or check clearings assembled for proving or processing purposes. A batch may consist of from 100-300 checks. See *batch processing*.

batch control ticket – A document accompanying a batch of transaction documents that records such information as batch number, control totals and routing.

batch processing – A method in which items are collected into groups or batches to permit convenient and efficient processing. Note: Records of all transactions affecting a particular master file are accumulated over a period of time (one day, for example), arranged in sequence and processed against the master file.

batch proof – A system for proving deposits, usually performed in the following sequence: (a) deposits are assembled in groups of various sizes; (b) deposit tickets are sorted into one group; (c) checks are sorted into several classifications, such as clearings, transit, bookkeeping; (d) cash release tickets are sorted according to tellers; (e) deposit tickets, checks and cash release tickets are listed on a "batch" or "block" sheet in their respective columns; (f) deposit and other credit totals should equal the total of all checks and other debits.

batch sheet – A "proof sheet" used in the batch proof system (see definition). The batch sheet is arranged in columns for deposits, various classifications of checks and other debits, and cash release tickets. After sorting, all items in the batch are listed in their respective columns and the totals are recapped and proved. The batch sheet becomes a permanent record of the bank, and is used by auditors to verify any errors arising from transactions.

batch total – A sum of a group of items used to check the accuracy of operations on a particular batch of records.

baud – Measurement of signaling speed indicating line changes per second, where line changes can represent one or more bits. A measure of data transfer speed. Only for line changes representing a single bit, baud is equal to bits per second. Common baud rates in telecommunications are 300, 1200, 2400, 9600, 14,400, or 28,800.

baud rate – A number representing the speed at which information travels over a communication line and/or through a COM serial port.

BCD (Binary Coded Decimal) – A 6-bit data code in which decimal digits are expressed by binary numerals. See *EBCDIC*.

benchmark – A point of reference from which measurement can be made.

binary – A numbering system using only the values 0 and 1. Used by computers for data representation.

biometrics – A method of verifying a person's identity by analyzing a unique physical attribute of a specific person including fingerprints, hand geometry, retinal scanning, voice verification or signature dynamics.

binary – A numbering system that uses only two digits 0 and 1. It is used in computers because it is easier for the machine to understand. Since the memory systems of a computer consist of a series of switches, a binary "0" means that the switch is off and a binary "1" means that the switch is on.

BIOS (Basic Input/Output System) – Provides fundamental services required for the operation of a computer. These routines are generally stored in Read Only Memory (ROM). They control basic hardware operations such as interactions with diskette drive, hard disk drives, and the keyboard.

bit – A binary digit (0 or 1) in the representation of a number in binary notation.

bitmap – A representation of an image by an array of bits. The image is stored as a pattern of dots.

block – A quantity of transmitted information regarded as a discrete unit by size or, more commonly, by its own starting and ending control delimiters. A block usually contains self-contained control, routing, and error-checking information; for example, the data recorded between two interblock gaps on a magnetic tape.

block diagram – See *flowchart*.

blocking – Combining two or more logical records into one block, usually to increase the efficiency of computer input/output operations. For example, the effective data transfer rates of most magnetic tape units can be increased greatly if the need for frequent tape stops and starts is reduced by combining multiple shorter logical records into longer physical blocks.

boundary protection – See *storage protection*.

BPI – Bytes or bits per inch.

branch – 1) An instruction that may cause a departure from the normal sequence of executing instructions, depending on the results of an operation, the contents of a register or the setting of an indicator; 2) A set of instructions executed between two successive conditional transfer instructions.

breakpoint – A specified point in a program at which the program may be interrupted by manual intervention or by a monitor routine. Note: Breakpoints are usually used as aids in testing and debugging programs. They facilitate the halting of a computer or the triggering of a printout at a particular point, so that specific conditions can be examined.

bridge – In local area networks, a device that enables two networks, even ones dissimilar in topology, wiring, or communications protocols, to exchange data. Bridges are protocol independent; routers are protocol dependent. Bridges are faster than routers because they do not have to read the protocol to glean routing information. See also *router*, *gateway*, and *hub*.

BTAM (Basic Telecommunications Access Method) – Provides the basic functions to control data communication circuits. It supports asynchronous terminals, synchronous communications, and audio response units. BTAM resides in the central computer and is the interface between the front-end-processor and the user-written application. BTAM is an access method that provides support primarily for input operations. It will not perform all tasks that must be executed in most communication networks; therefore, it is not widely used.

budget – An itemized listing of the amount of all estimated revenue that a business anticipates and the amount of all estimated costs and expenses that will be incurred in obtaining the revenue during a given period of time, such as a month or a year.

buffer – A RAM memory storage location that is used to temporarily hold data during communication between two devices. A temporary storage location that provides uninterrupted data flow between devices, such as keyboards and processors, or processors and printers, until the data from one can be accepted by the other. A device that temporarily holds information in memory. This information is lost when the buffer is turned off. Buffers are generally used between a computer and a printer so that the computer will not be tied up the entire time printing is taking place.

bug – A mistake in the design of a program or computer system or an equipment fault.

bulletin board system – Commonly referred to as a BBS (bulletin board system) that users can access through the use of their own computer with modem and a telephone line. The user “calls” the BBS by having his computer dial the telephone number. A computer at the BBS answers the call and connects itself to the calling user. The calling user may perform such actions as view e-mail, chat with other users, download files, and read information.

burst – To mechanically separate continuous form paper.

burst mode transmission – A procedure in which a logical data group is transmitted at one time.

bus – A transmission path or channel; typically an electrical connection, with one or more conductors, wherein all attached devices receive all transmissions at the same time; a local-network topology, such as used in Ethernet and the token bus, where all network nodes "listen" to all transmissions, selecting certain ones based on address identification.

byte – A group of adjacent bits operated on as a unit and usually shorter than a word. Note: In a number of current computer systems, this term stands specifically for a group of eight adjacent bits that can represent one alphanumeric character or two decimal character digits.

C

Carrier-sense multiple access with collision detection (CSMA/CD) – A local-network access-control technique, where all devices attached to a local network listen for transmissions in progress before attempting to transmit; if two or more begin transmitting at the same time, each backs off (defers) for a variable period of time (determined by a set algorithm) before again attempting to transmit.

CASE (Computer-Aided Software Engineering) – A software development technology that is used to automate the software development process and maintenance of software systems. CASE products or tools may be used separately or in an integrated fashion throughout the Software Development Life Cycle (SDLC) process.

CASE repository – The database in which the outputs of the various CASE tools are stored for later use.

cataloging – Placing data sets permanently in a storage device for later use. This technique avoids having to read in a data file each time certain programs or data are needed.

CBCT (Customer Bank Communications Terminal) – Remote electronic devices through which customers may withdraw, deposit, or transfer funds from or to checking or savings accounts (i.e., automated teller machines and service counter terminals).

CD-R (Compact Disk-Recordable) – A recordable CD-ROM technology using a disk that can be written only once. The disks are 4.72 inches in size and contain thousands of pages of information. For high-capacity storage, CD-R is not expected to replace the larger-disk WORM systems. See *CD-ROM*.

CD-ROM (Compact Disk-Read Only Memory) – These disks are 4.72 inches in size. Their major application is publishing-encyclopedias, directories, catalogs, and other references. A master disk is first produced by a publisher, and multiple copies are reproduced for distribution to users. With appropriate equipment (CD-ROM drives), these disks can be read thousands of times.

CE (Customer Engineer) – A person responsible for field maintenance of computer hardware and software.

central office – The phone company switching facility or center at which subscribers' local loops terminate; handles a specific geographic area, identified by the first three digits of the local telephone number.

central processor – The unit of a computer system that controls the interpretation and execution of instructions. Synonymous with CPU (central processing unit) and mainframe.

channel – An information transfer path within a computer system. In communications, a physical or logical path allowing the transmission of information.

channel bank – Equipment, typically in a telephone central office, that performs multiplexing of low-speed, generally digital, channels into a higher-speed composite channel; the channel bank also detects and transmits signaling information for each channel and transmits framing information so that time slots allocated to each channel can be identified by the receiver.

channel service unit (CSU) – A component of customer premises equipment to terminate a digital circuit, such as Dataphone digital service (DDS) or

T1 at the customer site.

character – One of a set of elementary signals which may include decimal digits 0 through 9, the letters A through Z, punctuation marks and any other symbols acceptable to a computer for reading, writing, or storing.

character density – A measure of the number of characters recorded per unit of length or area.

character recognition – The act of reading, identifying, and encoding a printed character by optical or other automatic means.

character set – A list of characters acceptable for coding to a specific computer or input/output device.

check bit – A binary check digit. Note: A parity check usually involves the appending of a check bit of appropriate value to an array of bits.

check digit – A digit that is calculated from the numbers in an account number, and added to an account number to check the correctness/validity of that number in subsequent use.

check point – A point in a routine at which sufficient information can be stored to permit restarting the computation from that point.

check problems – A problem whose correct results are known. Used to determine whether a computer or a program is operating correctly.

checksum – A method of error detection which is a summation of all the bits in a message and contained in the message. Used for encrypted messages.

CISC (Complex Instruction Set Computer/ Computing) – The traditional architecture of a computer that uses microcode to execute very complex instructions. Contrast with *RISC*.

class of service (COS) – Designation for one of several variable network connection services available to the user of a network, usually distinguished by security offered (such as encryption), transmission priority, and bandwidth; the network user designates class of service at connection establishment, typically using a symbolic name mapped into a list of potential routes, any of which may provide the requested service.

clearings – Checks and other items deposited for exchange with other financial institutions in a clearinghouse arrangement or through the Federal Reserve check clearing system.

client – A single user PC or workstation (front-end) associated with software that provides presentation services as an interface to computing resources. Presentation is provided by visually enhanced processing software, known as a Graphical User Interface (GUI).

client-server computing – A technique with which processing can be distributed between nodes requesting information (clients) and those maintaining data (servers). Similar to a LAN or WAN environment.

client-server network – A method of allocating resources in a local area network, so that computing power is distributed among computer workstations in the network, but some shared resources are centralized in a file server.

CMOS (Complementary Metal-Oxide Semiconductor) – Pronounced "sea moss," this MOS chip design is used because it costs less, consumes less electricity and can hold more circuitry in the chip than other designs. A CMOS chip is used with battery backup to store the BIOS setting in a personal computer. It tells the computer how to start itself when power is first turned on (Typically 3vDC voltage level). The CMOS runs the computer's internal clock and calendar for the time and date.

COBOL (Common Business Oriented Language) – A procedure-oriented language developed to facilitate preparation and interchange of programs which perform business data processing functions. Every COBOL source program has four divisions whose names and functions are: (1) Identification Division, which identifies the source program and the output of a compilation; (2) Environment Division, which specifies those aspects of a data processing problem that are dependent upon the physical characteristics of a particular computer; (3) Data Division, which describes the data that the object program is to accept as input, manipulate, create, or produce as output; and, (4) Procedure Division, which specifies the procedures to be performed by the object program by means of English-like statements, such as

"SUBTRACT TAX FROM GROSS-PAY GIVING NET-PAY" or "PERFORM-PROC-A THRU PROC-B UNTIL X IS GREATER THAN Y."

code of accounts – A chart of accounts in which each group (such as Assets) is given a group classification number (such as 1,000) with the second digit of that number (such as 1,000) representing the secondary classification (such as Current Assets) and the remaining digits (such as 01 in the figure 1,101) representing a finer breakdown (such as Cash) of the secondary classification.

code generator – Software that generates programming code from specifications.

coding – (1) An ordered list or lists of the successive instructions which direct a computer to perform a particular process; and (2) the act of preparing a list of coding instructions.

COM (Computer Output Microfilm/Microfiche) – A technology that converts data from a computer into visually readable language and records it on microfilm or microfiche.

communications server – A computer whose primary responsibility is to connect one network to another.

compile – To prepare a machine-language program (or a program expressed in symbolic coding) from a program written in another programming language (usually a procedure-oriented language, such as COBOL or FORTRAN). The compilation process usually involves examining and making use of the overall structure of the program, and/or generating more than one object program instruction for each source program statement. Same as *assemble*.

compiler – A computer program that compiles. Compilers are an important part of the basic software for most computers. However, the computer time required to perform the compilation process may be excessive. In addition, the object programs produced by the compiler may require more execution time and more storage space than programs written in machine language.

computer-aided software engineering (CASE) – See CASE

computer system – A functional unit consisting of one or more computers and associated software.

computer virus – A computer program which embeds itself in other code and can replicate itself. Once active, it takes unwanted and unexpected actions that can result in either nondestructive or destructive outcomes in the host computer programs.

CONFIG.SYS – This file contains statements that set up the system configuration each time you start or restart the operating system. The commands in this file enable or disable system features, set limits on resources, and extend the operation system functionality by loading device drivers. The operating system adds this file to the root directory during installation.

console – A unit of equipment, usually a video display and keyboard or printer, used by computer operators or maintenance engineers to communicate with the computer.

console operator – The employee charged with the duty of operating or supervising the operation of a control console, including direction of the main computer and all elements of the system directly connected with it.

console run book – A book containing computer operator instructions for a run.

constant-ratio code – A code in which all valid characters have the same number of 1 bits, thereby facilitating the performance of a validity check. For example, in the "4-of-8" code, frequently used in data communications, each of the valid characters is represented by a combination of four 1 bits and four 0 bits.

contention – When a computer terminal has data to send on a multipoint line it selects the terminal's address and then sends it. In a contention environment any location can attempt to transmit data to another location in the network at any time. If the addressed location is not busy, transmission occurs. Other terminals attempting to send data receive a busy signal until the first transmission ends.

context sensitive help – A feature of many programs wherein pressing the hot key (F1) or selecting the menu choice brings up the assistance and information that pertains to the portion of the program that is currently active or the task that is currently being performed.

contingent liability – The term applied to the obligation of a guarantor or accommodation endorser of a negotiable instrument. The guarantor or endorser receives no benefit from the negotiable instrument involved, but is required by law to make good the payment of the instrument if the maker defaults. The actual liability exists with the maker of the note (the borrower). The contingent liability exists for the duration of the instrument, and is passed to the guarantor or endorser as a primary liability only if the borrower dishonors the instrument upon presentation and request for payment.

control account – An account in the general ledger used to carry the total of several subsidiary accounts. Whenever any subsidiary account is affected, the transaction will be reflected in the control account total. Control accounts are also used as "total" accounts, controlling the accounts within a "book" or "ledger" in the bookkeeping department and the savings department.

control clerk – A person performing duties associated with the control over data processing operations. Note: Such duties usually include the checking of control totals, run-to-run totals, and output totals before distribution, etc.

control environment – Management's efforts to exercise direction or restraint over surrounding conditions or influences of the data processing function.

control program – A routine, usually contained within an operating system, that aids in controlling the operation and in managing the resources of a computer system.

core storage – A form of high-speed storage using magnetic cores; part of the CPU; also used to refer to main storage.

correspondent bank – A bank that is the depository for another bank or provides other banking services is known as its correspondent. The correspondent bank accepts deposits in the form of cash letters and collects items for its depositor.

CPU (Central Processing Unit) – Same as central processor.

CPU clock – Used to record the amount of time the central processing unit takes to execute instructions.

crossfooting test – A programmed check on computer processing in which individual items used in arriving at result items are totaled and the total is compared to an independently derived result total. For example, a total net pay figure reached by subtracting a deduction item total from a gross pay total can be compared with a total net pay figure derived by another method under the program.

cut – An expression used in financial institutions to denote totaling a pack of sorted checks going to one destination. The term is most often used in institutions equipped with proof machines. Since these machines can list a large number of checks on a tape, it is more convenient to "cut a tape" by taking totals at periodic intervals.

cut-off – For better control over a huge volume of checks passing through the proof department in large financial institutions, these institutions have periodic "settlements" or "cut-offs" of work. Each "cut-off" is balanced and items are immediately released from the proof department after each "settlement." This also permits transit items to be mailed in several deliveries each business day.

cycle mailing – The practice of dividing the depositors' accounts into groups termed "mailing cycles," and the mailing of statements at periodic intervals during the month. Proponents of this practice claim that it is more efficient than mailing all depositor statements at one time (usually at the end of the month).

cycle posting – The practice of dividing accounts to be posted into groups termed "cycles" and posting these accounts at periodic intervals during the month.

D

DASD (Direct Access Storage Device) – A peripheral device that is directly addressable, such as a disk or drum. The term is used in the mainframe world. See also *direct access* and *random access*.

database – Data items that are stored in order to meet an organization's information processing and retrieval needs. An organized collection of information that

can be accessed by a computer. Also, describes a category of software programs used to organize and manipulate long lists of data, such as names, addresses, and phone numbers. As you type the list, the software automatically copies it onto a disk (unlike most other software that requires you to activate the "Save" feature to write to disk). You can edit the data list and sort it in any order you wish. Note: The term may refer to an integrated file used by many processing applications, as opposed to an individual data file for a particular application.

database server – A computer that stores data centrally for network users and managers, and often uses client-server software to distribute the processing of that data between itself and nodes requesting information.

data capture – The process of recording data on machine-readable tape and/or disk type media as a by-product of transaction processing. In point-of-sale systems, it refers to functions performed by a terminal or computer in capturing information relative to a sale. The information captured is stored in a data base. It can then be accessed for providing audit trails, printing statements for customers, and other purposes.

data circuit-terminating equipment (DCE) – In a communications link, equipment that is part of the network, an access point to the network, a network node, or equipment which a network circuit terminates; in the case of an RS-232-C connection, the modem is usually regarded as DCE, while the user device is data terminal equipment (DTE); in a CCITT X.25 connection, the network access and packet switching node is viewed as the DUE.

data collection – Act of bringing data from one or more points to a certain point.

data compression – A software technique used to increase the amount of data stored on a hard disk. Data compression utilities reduce the space needed to store individual files, thereby increasing the number of files that can be stored in a given space. A compressed file cannot be used until it is expanded to its original form.

data concentrator – A piece of hardware that collects data at an intermediate point from several low and medium speed lines for retransmission across high-speed lines.

data conversion – Process of changing data from one form of representation to another, such as converting written source documents to machine-readable form by keypunching or data entry.

data dictionary – The database that describes data and its attributes.

data element – A piece of information carried in a program or data file. May be a bit character field or a data string.

Data Encryption Standard (DES) – U.S. government standard for data encryption method published by the National Institute of Standards and Technology for the encryption of sensitive U.S. Government data that does not fall under the category of national security related information. The DES uses a 64-bit key consisting of 56 independent bits and 8 others which may be used for parity checking.

data file – A collection of related data records organized in a specific manner for a particular application.

data link layer – Establishes, maintains, and releases data links and ensures error-free transmission; invokes retransmission when errors are detected.

data phone – An AT&T designation for a service that provides data communications over telephone facilities.

data reduction – The use of arithmetic, mathematical or statistical techniques to obtain or extract only needed information from a larger mass of related information.

data scope – See *oscilloscope*.

data set – A collection of related data. See *file*.

data terminal equipment (DTE) – Generally end-user devices, such as terminals and computers that either generate or receive the data carried by the network; in RS-232 connections, designation as either DTE or DCE determines signaling role in handshaking; in a CCITT X.25 interface, the device or equipment that manages the interface at the user's premises.

data transmission – The sending of data from one part of a system to another part.

DBMS (Data Base Management System) – A comprehensive software system that builds, maintains, and provides access to common data items that can be processed by one or more application programs. This software establishes and employs rules about system file organization and processing and establishes relationships between files and "records" in each file. This provides for integration or sharing of common data items that can be processed by one or more application programs; can be hierarchical, network or relational in structure.

DDBMS (Distributed Data Base Management System) – A data base which is spread across several, possibly remote, computers which are interconnected by a communications network.

debug – To trace and eliminate mistakes in a program or faults in equipment. Synonymous with *troubleshoot.*

decision table – A table listing all the contingencies to be considered in the description of a problem, together with the corresponding actions to be taken. Note: A decision table permits complex decision-making criteria to be expressed in a concise and logical format. It is sometimes used in place of flowcharts for problem definition and documentation. Compilers have been written to convert decision tables into programs that can be executed by computers.

decollate – A term used in the computer industry when referring to the separation of carbon paper from the hardcopy original computer paper and the hardcopy duplicates. Computer paper for trial balance reports and other supporting reports normally consists of one original and multiple copies with carbon paper between each page. Most centers have decollating machines to remove the carbon paper, while others complete this process by hand.

desk checking – A manual checking process in which representative data items are traced through the program to detect errors in program logic.

destructive update – A file posting procedure in which the output file is created on the same physical media that contained the input file, thus destroying the input file. See *update*.

detail file – A file containing relatively transient information. For example, records of individual transactions that occurred during a particular period of time. Synonymous with *transaction file*. Contrast with *master file*.

diagnostics – Messages that are output from the compiler or assembler, indicating possible errors in the source program.

diagnostic routine – A routine designed to perform diagnostic functions. See also *dump, post-mortem routine, snapshot* and *trace routine* (commonly used types of diagnostic routines).

dial-back – A security method in which a user dials-up a system for access; the system verifies the user call and calls back at a predetermined phone number.

dial-up – The ability of a remote user to access a system by using private or common carrier telephone lines.

difference account – An account carried in the general ledger where all differences from the true balance of the daily business of the financial institution are recorded. Overages and shortages of all departments are recorded in this account. In large institutions, a difference account may exist for each department, and the net total of these subsidiary difference accounts will balance to the general ledger control.

digit – A single symbol or character representing a quantity.

digital – Referring to communications processors, techniques, and equipment where information is encoded as either a binary "1" or "0"; the representation of information in discrete binary form, discontinuous in time, as opposed to the analog representation of information in variable, but continuous, waveforms.

digital signatures – Data appended to or a cryptographic transformation of, a data unit that allows a recipient of the data unit to prove the source and integrity of the data unit and protect against forgery by the recipient.

direct access – Pertaining to a storage device where data or blocks of data can be read in any particular order. See *random access*.

direct verification – A method of financial institution audit whereby the auditor sends a request for the verification of the balances of accounts as of a stated date to the customers. Verifications are returned and directed to the auditor confirming the correctness of balances or listing discrepancies.

disk – A physical element for direct access storage.

disk pack – A removable direct access storage media containing several magnetic disks on which data is stored.

disk storage – A storage device which uses magnetic recording on flat rotating disks.

Distributed Transaction Processing (DTP) – Distributed application processing involves multiple users requiring access to a single shared resource concurrently. An example is a bank application containing customer accounts which require multiple access for both reading and update operations.

dormant accounts – Accounts that have had no customer originated activity for a stipulated period. See also *inactive accounts*.

DOS (Disk Operating System) – Software that directs the flow of data between disk drives and a computer. It acts like a "Traffic Cop" to control the flow of information to and from application software.

downtime – The elapsed time when a computer is not operating correctly because of machine failure.

drum storage – A direct access storage device which uses magnetic recording on a rotating cylinder. A type of addressable storage associated with some computers.

dual read – The use of two separate reading stations to read the same record. Results of the two operations are compared to detect reading errors.

dumb terminal – See *terminal*.

dump – (1) To copy the contents of a set of storage locations, usually from an internal storage device (such as core storage) to an external storage medium (such as magnetic tape) and usually for diagnostic or rerun purposes; (2) data that results from the process defined in (1). See also *post-mortem routine, selective dump* and *snapshot*. Synonymous with *storage dump*.

duplex channel – A channel providing simultaneous transmission in both directions.

E

EBCDIC (Extended Binary Coded Decimal Interchange Code) – An 8-bit code that represents an extension of the 6-bit "BCD" code widely used in computers of the first and second generations. Note: EBCDIC can represent up to 256 distinct characters and is the principal code used in many current computers. See also *ASCII*.

echo check – A check upon the accuracy of a data transfer operation in which data received (usually by an output device) is transmitted back to its source (usually a control unit) and compared with the original data. For example, an echo check on an output operation usually can verify that the proper print hammers or punch pins were actuated at the proper moments. However, it cannot ensure that the proper marks were actually recorded on the output medium.

edit – To modify the form or format of data. This may involve the rearrangement, addition (for example, insertion of dollar signs and decimal points), and deletion (for example, suppression of leading zeros) of data, code translation and control of layouts for printing (for example, provision of headings and page numbers).

edit routines – Routines used to verify the accuracy or reasonableness of data. Also used to modify the form or format of data. This may involve the rearranging, adding (inserting dollar signs and decimal points) and deleting (suppressing leading zeros) data.

Electronic Bulletin Boards (EBBs) – A computer with special software so that it can be accessed by anyone with a modem and phone line. Callers may put notes and messages on the EBB through their computer or may read any messages or notes left by other users. These can be run as a commercial enterprise (for fee) or by hobbyists (usually at no cost). See *bulletin board system*.

EDP (Electronic Data Processing) – An all inclusive term liberally interpreted to mean the overall process of converting data by electronic means to any desired form.

EFTS (Electronic Funds Transfer System) – Various computerized electronic communications systems which transfer financial information from one point to another.

Electronic Mail (E-Mail) – Software on several computers on a network which facilitates the passing of messages from one user of the network to another.

emulator – A device usually used in conjunction with special routines that enables a computer to execute, without prior translation, machine-language programs written for another computer of dissimilar design. Note: Emulation is a method for achieving program compatibility between computers produced by the same or different manufacturers.

encryption – The process of scrambling data by a device or encoding principle (mathematical algorithms) so that the data cannot be read without the proper codes for unscrambling the data.

end-to-end-accountability – The property that ensures that the actions of an entity from initial system logon to system logoff may be traced uniquely to the entity even when those actions take place across a distributed system or network.

entry – The original record made in account books, also the items so entered. In double entry bookkeeping, an entry is incomplete if the total value of the debits and credits used to complete the records of a given transaction are not equal.

error correcting code – An error detecting code that uses additional code elements (e.g., additional bits), so that if a certain type of error occurs, the mutilated representation can be analyzed and corrected. Note: An erroneous correction may result if an error occurs that the code has not been designed to correct.

error detecting code – A code in which each representative or character conforms to specific rules of construction, so that if certain types of errors occur, the mutilated representation will not conform to the rules of construction. Thus, the presence of errors can be detected without reference to the original message. Note: Each of the most common types of error detecting codes appends a parity bit to each array of bits and uses a parity check. Synonymous with *self-checking code*.

exception reports – Reports which list or flag only those items that exceed a specified range of acceptable values. Also, reports of extraordinary or particular circumstances and activity.

execute phase – An alternate part of the computer's operation cycle where a command in the program register is performed upon the address indicated. The act of performing a command.

executive routine – A routine designed to organize and regulate the flow of work in a computer system by initiating and controlling the execution of other programs; a principal component of most operating systems. Synonymous with *supervisory routine* and *supervisor*.

expanded memory – RAM memory above 1 megabyte that can be used by DOS and some DOS programs in addition to conventional memory.

extended memory – RAM memory that begins above 1 megabyte.

external label – An identifying label attached to the outside of a file media holder; for example, a paper sticker attached to the side of a reel containing a magnetic tape file.

external storage – A storage device outside the computer which can store information in a form acceptable to the computer, e.g., cards, tapes.

F

facilities management – An arrangement whereby a third party operates a bank's data processing department, usually under a multi-year contract.

fetch protection – Prevents one program from accessing the core storage of another program when locating the next instruction in memory for execution by the CPU. See *storage protection*.

fiber optic cable – Glass or plastic fibers over which modulated light pulses from laser or LED (Light Emitting Diode) can transmit data. It is not subject to interference or electronic eavesdropping.

fidelity bond – A bond covering the risk of loss because of larceny, embezzlement, or culpable negligence.

field – (1) a subdivision of a computer word or instruction (for example, a group of bit positions within an instruction that hold an address); or (2) a subdivision of a record, that is, an item.

file – A collection of related records, usually (but not necessarily) arranged in sequence according to a key contained in each record. (Note: A record, in turn, is a collection of related items; an item is an arbitrary quantity of data that is treated as a unit. In payroll processing, an employee's pay rate forms an item, a set of all items relating to a particular employee forms a record, and the complete set of employee records forms a file.)

File Allocation Table (FAT) – A table used by DOS to allocate disk space for a file. It also locates and chains together parts of the file that may be scattered on different sectors, so that the files can be used in a random or sequential manner.

file label – A label identifying a file. Note: An internal label is recorded as the first or last record of a file and is machine-readable. An external label is attached to the outside of the file holder and is not machine-readable.

file maintenance – The updating of files to reflect the effects of nonperiodic changes by adding, altering or deleting data; for example, the addition of new programs to a program library on magnetic tape.

file processing – The periodic updating of master files to reflect the effects of current data, often transaction data contained in detail files; for example, a weekly payroll run updating the payroll master file.

file protection ring – On older computer systems, the absence or presence of a removable plastic or metal ring which (depending on the computer manufacturer) prevents writing on a magnetic tape and thereby prevents the accidental destruction of a magnetic tape file.

file server – A high capacity disk storage device or a computer that stores data centrally for network users and manages access to that data. File servers can be dedicated so that no processes other than network management can be executed while the network is available. File servers can be nondedicated so that standard user applications can run while the network is available.

fine sort – A term used to describe the act of sorting transaction media into numerical or alphabetical order.

firewall – A network node set up as a boundary to prevent traffic from one segment to cross over into another. Commonly used to separate the Internet portion of a company's network from the remainder of the network. See *router* and *bridge*.

fixed-length record – A record that always contains the same number of characters. Note: Restriction to a fixed length may be deliberate in order to simplify and speed processing, or it may be dictated by the characteristics of the equipment used. Contrast with *variable-length record*.

flag – Any of various types of indicators used to denote the existence of a condition.

flashcard – A device for the storage of information usually associated with lap-top or notebook computers.

flow – A general term to indicate a sequence of events.

flowchart – A programming tool to graphically present a procedure by using symbols to designate the logic of how a problem is solved. An example would be a block diagram.

format – An arrangement of information on a form or in storage.

FORTRAN (Formula Translating system) – A procedure-oriented language designed to facilitate the preparation of computer programs that perform mathematical computations. Note: Designed by IBM in the 1950s to use symbols and expressions similar to those of algebra, FORTRAN was not originally intended to be a common language. However, it has evolved through several basic versions (FORTRAN

I, FORTRAN II, FORTRAN IV, etc.) and numerous dialects. It has become largely machine-independent and has recently been approved as a USA standard programming language in two versions (FORTRAN and Basic FORTRAN). FORTRAN is now being employed effectively in certain business as well as scientific applications.

4GL (Fourth Generation Language) – Commercial software which allows a nonprogrammer to formulate English-like commands and queries without having to form a complex programming code.

frame – A group of bits sent serially over a communications channel; generally a logical transmission unit sent between data-link-layer entities that contains its own control information for addressing and error checking; the basic data transmission unit employed with bit-oriented protocols, similar to *blocks*.

frame relay – A high-speed packet switching protocol used for wide area networks (WANs). It is faster than traditional X.25 networks, because it was designed for today's reliable circuits and performs less rigorous error detection. It provides for a granular (customizable) service up to DS1 rates of 1.544 Mbps and is suited for data and image transfer. Because of its variable-length packet architecture, it is not the most efficient technology for real-time voice and video.

front end processor – Typically, a minicomputer used in input processing prior to batch processing or to control data communications networks and terminals in on-line systems.

G

garbage – Unwanted and meaningless information.

gateway – A computer that performs protocol conversion between different types of networks or applications. For example, a gateway can connect a personal computer LAN to a mainframe network. An electronic mail, or messaging, gateway converts messages between two different messaging protocols. See *bridge*.

general controls – Controls common to several applications, such as operation controls and access controls. Contrast to *application controls*.

generate – To produce, develop, and prepare a program from a set of specifications.

generator – A computer program designed to construct other specialized programs; for example, a report program generator or a generator of data transcription routines. Note: Basing its decisions upon parameters supplied to it, a generator usually selects from among various alternatives the method most suitable for performing a specified task. It then adjusts the details of the selected method to produce a program matched to the characteristics of the data to be handled.

grandfather, father, son cycle – The creation and storage of three generations (or versions) of master files, so that records can be reconstructed in the event of loss of information stored on a magnetic tape.

group – A named collection of logon IDs.

GUI (Graphical User Interface) –A graphical-based user interface that incorporates icons, pull down menus, and a mouse. Designed to make use of a computer easier, because user interactions are consistent, applications communicate effectively, and the GUI hides the complexity of the system.

H

hard copy – Machine output in a visually readable form (usually paper).

hardware – Refers to physical equipment (as opposed to the computer program), for example, mechanical, magnetic or electronic devices. Contrast with *software*.

hash total – A numerical summation of one or more corresponding fields of a file that would ordinarily not be summed.

head – A device that reads, records, or erases data on a storage medium, e.g., a small electromagnet used to read, write, or erase data on a magnetic drum or tape, or the set of perforating, reading, or marking devices used for punching, reading, or printing on paper tape.

header – Control information and codes that are appended to the front of a block of user data for control, synchronization, routing, and sequencing of a transmitted data frame or packet.

header label – A machine-readable record at the beginning of a file containing data identifying the file and data used in file control.

heuristic – Pertaining to exploratory methods of problem solving in which solutions are arrived at by an interactive, self-learning method. Contrast with *algorithmic*.

hexadecimal – A number system with a base, or radix, of 16. The symbols used in this system are the decimal digits 0 through 9 and six additional characters represented with the letters A, B, C, D, E, and F. Computer programmers use this number system extensively.

high-level data link control (HDLC) – CCITT-specified, bit-oriented, data-link-control protocol; any related control or data links by specified series of bits, rather than by control characters; the foundation on which most other bit-oriented protocols are based.

high-level language – A computer programming language in which each statement represents several binary code instructions. The statements are familiar and common terms used with computers.

housekeeping – Operations in a program or computer system that do not contribute directly to the solution of user's problems, but are necessary to maintain processing control.

hold – A term given to the act of restricting withdrawal of funds from an account.

holdovers – A term used, usually in large financial institutions, to describe a portion of work that has to be processed by a second shift or a night force. Since the business day starts officially at midnight, work which has not been processed by the second shift is "held over" for the night shift to process the remaining work. The work, for control purposes, is credited to the second shift, and recharged as "holdovers" to the night shift.

hub – A central connecting device in a network that joins communications lines together in a star configuration. Passive hubs are connecting units that add nothing to the data passing through them. Active hubs, also sometimes called multiport repeaters, regenerate the data bits to maintain a strong signal, and intelligent hubs provide added functions. Hubs can provide bridging between LAN types; for example, Ethernet, Token Ring and FDDI.

hypertext – Linking related information. For example, by selecting a word in a sentence, information about that word is retrieved if it exists, or the next occurrence of the word is found.

I

identification – A unique name or number assigned to an individual user accessing a system or a resource.

IDP (Integrated Data Processing) – Data processing by a system that coordinates a number of previously unconnected processes to improve overall efficiency by reducing or eliminating redundant data entry or processing operations; for example, a system in which data describing orders, production, and purchases are entered into a single processing scheme that combines the functions of scheduling, invoicing, and inventory control.

image – An exact logical duplicate stored in a different medium.

imaging systems – The technology used to capture, index, store, and retrieve electronic images of paper documents. The main method of capturing images is by scanning the documents, and turning them into a matrix of dots.

inactive account – An account that has no customer-generated activity. The balance may be stationary, neither deposits nor withdrawals having been posted to the account for a period of time. See also *dormant accounts*.

Index – gives the requestor the location of an image.

infirmity – Any known act, or visible omission in detail, in the creation or transfer of title that would invalidate an instrument. Common examples of infirmities that would cause a financial institution to

refuse payment, if detected, are endorsement missing, signature missing, amount conflicting in written and numerical figures, alteration, or forgery.

information security officer – The person responsible for ensuring that security is provided for and implemented in a computer system from the beginning of the concept development phase through its design, development, operation, maintenance, and secure disposal.

information system (IS) – A system that consists of people, machines, and methods organized to accomplish specified operations on data that represent information.

information technology – A general term applied to the gathering, storing, processing, and communication of information.

input – Data to be processed. Also the transfer of data to be processed from keyboard or an external storage device to an internal storage device.

input area – The area of internal storage into which data is transferred from external storage.

Integrated Services Digital Network (ISDN) – Protocols used for carrying voice, data, facsimile, and video signal across a single network.

intelligent terminal – A terminal that can be programmed independently by the user.

interactive – An application in which each entry elicits a response, as in an inquiry system or an airline reservation system. An interactive system may also be conversational, implying continuous dialogue between the user and the system.

interblock or interrecord gap – The distance on a data medium, such as magnetic tape, between the end of one block or record and the beginning of the next. Note: Within this distance, the tape can be stopped and brought up to normal speed again. Since the tape speed may be changing, no reading or writing is permitted in the gap.

interface – A common boundary between automatic data processing systems or parts of a system defined by common physical interconnection characteristics, signal characteristics and meanings of interchanged signals.

interleave – To insert segments of one program into another program, so that the two can be executed simultaneously.

interlock – A protective facility that prevents one device or operation from interfering with another; for example, the locking of a console typewriter's keys to prevent manual entry of data while the computer is transferring data to the typewriter.

internal label – Normally, the first record on a data file, used as a check to ensure that the proper records are being processed.

Internet – A system of connected networks including those of the National Science Foundation and the Advanced Projects Research Agency.

interrupt – A signal, condition, or event that causes an interruption; for example, the completion of an input or output operation, the detection of incorrect parity, or the attempt to execute an illegal instruction or to write in a protected location.

interruption – A temporary suspension in executing a sequence of instructions resulting from the occurrence of a prescribed event or condition (e.g., an *interrupt.* Note: An interrupt usually triggers an unconditional transfer to a predetermined location, where a special routine (usually part of an operating system) determines the cause of the interruption, takes appropriate action and returns control to the point where the program was interrupted (or, in some cases, to another program of higher priority). Effective interruption facilities are vital in computers that operate in multiprogramming or real-time mode.

I/O – Abbreviation for input/output.

IOCS (Input/Output Control System) – A standard routine or set of routines (part of the supervisor) designed to initiate and control the input and output processes of a computer system, thereby making it unnecessary for users to prepare detailed coding for these processes. A supervisor may contain both logical and physical IOCS routines.

ISDN (Integrated Services Digital Network) – A method of high speed digital telecommunication that can be used to transmit and receive voice, data, and

images over existing telephone lines.

IRG (Interrecord Gap) – Same as *interblock gap*.

isochronous transmission – Combines the elements of both synchronous and asynchronous data transmission.

item – Any media, excluding coin and currency, handled daily by a financial institution, the amount or amounts of which, as expressed thereon, will be posted in total, or in detail, as a debit or credit to an institution's account. Items are generally referred to by their type, as "cash items," "transit items," "on us items," "clearing items," "general ledger items," etc.

J

JCL (Job Control Language) – A programming language used to code job control statements. These statements supply information to the operating system and to operators about the program, e.g., name of user, how much memory is required, estimated run time, priority.

job accounting – A function that accumulates accounting software information for each job step to be used for changing use of the system, planning new applications, and supervising system operations more efficiently.

job queuing – A procedure in which programs are read into the computer and await execution until sufficient core storage and peripheral equipment are available.

K

K (kilobyte) – Term used to measure computer storage capacity; one K equals 1,024 bytes or characters.

key – One or more characters associated with a particular item or record and used to identify that item or record, especially in sorting or collating operations. Note: A key may or may not be attached to the record or item it identifies. Contrast *label* and *tag*.

kite – A scheme in which a depositor with accounts in two or more financial institutions takes advantage of the time required for checks to clear to obtain unauthorized credit.

L

label – One or more characters used to identify a program statement or a data item.

LAN – (Local Area Network) A system of software and hardware (computers, printer, etc.) and a communications network that links personal and other computers. It is connected by a common data transmission medium (cable) and limited to a geographical area less than about 10 kilometers. Two or more computers connected for local resource sharing. It is made up of servers, workstations, a network operating system, and a communications link. Contrast with *WAN (Wide Area Network)*.

language – A defined set of characters which are used to form symbols, words, etc., and the rules for combining these into meaningful communication, e.g., Algol, FORTRAN, COBOL, Assembler.

Large Scale Integration (LSI) – A technology of chip manufacturing for CPU's and other large microprocessors.

lateral parity check – Same as *row parity check*.

layout – The overall plan or design, such as flowcharts or diagrams, format for card columns or fields, or a procedure outline.

library – A collection of available computer programs and routines.

library routine – A proven routine maintained in a program library (as opposed to a routine written especially for a particular job).

limit test – A programmed check for errors in input data or processing. Note: For this test, a data item is compared with a test amount larger (or smaller) than the data item should be if it is correct. If the checked item is larger (or smaller) than the test amount, an error is indicated.

line printer – A printer in which an entire line of

characters is composed and determined within the device prior to printing.

link – An interconnection.

linkage – The interconnections between two separately coded routines, i.e., entry and exit for a closed routine from the main routine.

linkage editor – A utility program that takes as its input object modules and produces a machine language load (fully executable) module. It formally unites references between program modules and libraries of subroutines.

list – A column of figures listed on an adding machine tape or piece of paper. The term is common in financial institutions, especially in proof, transit and bookkeeping departments where lists are constantly used. Lists are used in obtaining totals for a large volume of items in the same category, such as checks drawn on the same account. The total is posted or used in clearing exchanges or transit letters.

log – A record of the operations of data processing equipment, listing each job or run, the time required, operator actions, and other pertinent data.

logic diagram – Same as *program flowchart*.

longitudinal parity check – A parity check performed on the bits in each track of magnetic tape or punched tape. Note: For this check, the parity bits generated for each of the tracks are recorded simultaneously at the end of each block, in the form of a "longitudinal check character." This is regenerated and checked when the block is read. Synonymous with *track parity check.*

loop – A sequence of instructions that can be executed repetitively, usually with modified addresses or modified data values. Note: Each repetition is called a cycle. Cycling continues until a specified criterion is satisfied (for example, until a counter reaches a predetermined value). The use of loops greatly facilitates the coding of any reiterative process.

LOWER CASE – Term used to describe CASE software modules which automates later stages of software development (programming, testing, and implementation). These are also referred to as back-end tools and have been more widely used and accepted as traditional programmer productivity aids. Case tools in this category would be code generator and test generator software.

M

machine language – A computer's native language of binary code using 0's and 1's. All executable programs are converted into the binary code of machine language so the computer can process the information.

macro instruction – An instruction that has no equivalent operation in the computer and is replaced in the object program by a predetermined set of machine instructions. Note: Macro instruction facilities can ease the task of coding by precluding the need for detailed coding of input and output operations, blocking, format control, error checks, etc.

macro programming – The process of writing machine procedure statements in terms of macro instructions.

magnetic disk – A flat circular plate with a magnetic surface on which data can be stored in the form of magnetized spots.

magnetic media – Devices used to store computer records; i.e., tape or disk.

marking – The physical notation of a sensitivity label, usually on a document.

mechanism – An operating system entry point or separate operating system support program that performs a specific action or related group of actions.

mainframe – A large computer. Originally, the term referred to the CPU cabinet. Now it refers to a large computer system.

maintenance programmer – Person responsible for periodic updates in various programs.

manual input – The manual entry of data into a device to convert it to electronic form at the time of processing.

mass storage – Large capacity storage that supplements a computer's primary internal storage.

master file – A main reference file of information used in a computer system. It provides information to be used by the program and can be updated and maintained to reflect the results of the processing operation.

matrix – Items arranged in an array or pattern.

media – Media can be classified as source, input and output. Checks are an example of source media. Input media can be punched tape or cards and magnetic tape. Output media can be punched tape, cards or magnetic tape.

megacycle – One million cycles per second.

memo posting – A systems technique in which transactions are posted to a temporary file before permanent master files are updated. For example, large deposits or withdraws may be posted to a temporary balance file throughout the day, but the master file is updated at the close of the day only from the transaction documents.

memory layout – A diagram showing the assignment of internal storage locations for various purposes (storage of input or output record, storage of constants, etc.).

merge – To form a single sequence by combining two or more similarly sequenced files. Note: Merging may be performed by a computer system for which a merge routine is available. The repeated merging, splitting, and reemerging of records strings can be used to arrange them in sequence. This process, known as a merging sort, is often used as the basis for sorting operations on computer systems.

MICR (Magnetic Ink Character Recognition) – Check routing account number and dollar information is encoded in MICR at the bottom of checks.

microfiche – Computer-generated media, similar to microfilm, used to record data.

microfilm – A roll of film used in a machine to photograph various records.

microsecond – One millionth of a second; one thousand nanoseconds.

middleware – A client/server specific term used to describe a unique class of software by client/server applications. This software resides between an application and the work and manages the interaction between the GUI front-end and data servers in the backend. It facilitates the client/server connections over the network and allows client applications to access and update remote databases and mainframe files.

milestone – A reference point used to establish when steps in a process are complete.

millimicrosecond – See nanosecond.

minicomputer – A low cost, programmable computer with limited storage capacity.

mis-sent item – An item that has been sent in error to another financial institution.

mis-sort – An item or check that is sorted into the wrong account. A mis-sent item leaves the financial institution, while a mis-sorted item remains in the financial institution's possession, but causes a control problem.

mnemonic code – A technique to assist the human memory. A mnemonic code resembles the original word and is usually easy to remember, i.e., MPY for multiply and ACC for accumulator.

modem (modulator-demodulator) – A device that converts digital and analog signals into soundwaves that can be sent via telephone lines. The process is reversed for soundwaves from phone lines into impulses for the terminal. This device that permits computers to communicate with one another over telephone lines.

module – A program unit that is discrete and identifiable for compiling, combining with other units, and loading.

monitor – To control the operation of several unrelated routines and machine runs so that the computer and computer time are used advantageously.

monitor routine – 1) A routine designed to indicate

the progress of work in a computer system; and 2) formerly, same as executive routine.

multidrop – In a multidrop network, one terminal is the master or primary station and the rest are secondary stations. A failure on a secondary station will not prevent the data from being transmitted to the other stations. Each station has its own address. No two stations can transmit at the same time.

multilink – In a multilink network the data travels from point A to point B and then to point C, to point D etc. If one terminal on the link fails, all subsequent terminals are affected.

multimedia – The combining of different elements of media (text, graphics, sound, video) for display and control from a personal computer.

multiplexer – A physical device that allows simultaneous transmission of more than one message per line in a teleprocessing system.

multiplexer channel – Low-speed channel capable of two-way transmission.

multipoint – In a mult point network the data flows from point A to point B, from point A to point C, point A to point D, etc. It also flows from points B, C, and D to A.

multiprocessing – Two or more computers linked together, with simultaneous processing of programs each resident in one of the computers. Each computer may run independently or all may access the storage area of another linked computer.

multiprocessor – A computer with more than one Central Processing Unit (CPU) that can be accessed simultaneously by an operating system adapted to this architecture.

multiprogramming – Since the CPU is usually the fastest component in the computer system, multiprogramming attempts to balance the CPU's speed with slower peripherals by allowing several computer programs to run on the computer system at the same time.

MVS (Multiple Virtual Storage) – Introduced in 1974, the primary operating system used on IBM mainframes (the others are VM and DOS/VSE). MVS is a batch processing oriented operating system that manages large amounts of memory and disk space. Online operations are provided with CICS, TSO, and other system software. MVS/XA (MVS/eXtended Architecture) manages the enhancements, including 2GB of virtual memory, introduced in 1981 with IBM's 370/XA architecture. MVS/ESA (MVS/Enterprise Systems Architecture) manages the enhancements made to large scale mainframes, including 16TB of virtual memory, introduced in 1988 with IBM's ESA/370 architecture. MVS/ESA runs on all models of the System/390 ES/9000 product line introduced in 1990.

N

nanosecond – One billionth of a second.

negative verification – The method of direct verification where the absence of reply indicates a correct balance. See *direct verification*.

network – A group of computers connected by cables or other means and using software that enables them to share equipment and exchange information. A system of software and hardware connected in a manner to support data transmission. An arrangement for interconnecting a number of computers and allowing them to share information and peripheral devices.

network administrator – The person responsible for the installation, management, and control of a network.

network architecture – A description of data formats and procedures used for communication between nodes.

network layer – Exchange of information between two entities over network connections. This layer insulates routing and switching considerations from the rest of the network. Routing between nodes with no direct connection is controlled by querying intermediate nodes to determine a route between the non-physically connected nodes.

network topology – The arrangement of nodes usually forming a star, ring, tree, or bus pattern.

node – Any device, including servers and workstations, connected to a network. Also, the point where devices are connected.

noise – Any extraneous and unwanted signal disturbances in a communications link (e.g., electromagnetic interference, or EMI); usually, random variations in signal voltage or current, or interfering signals.

nonbank servicer – A third party data processing servicer that is not a department or subsidiary of a bank.

O

object – Anything in a computer environment that a subject can act upon, such as in computer security, anything to which access is controlled; for example, a file, program, area of main storage.

object language – A machine language that is the output from a translation process using a compiler or assembler program. Contrast with *source language*.

object program – A program expressed in an object language; for example, a machine-language program that can be directly executed by a computer.

object reuse – The ability to access residual information that is left behind on recycled storage media when a job or activity terminates.

OCR (Optical Character Recognition) – A technology used to convert text in a graphical image into a word processor format that can be used by a computer. OCR is frequently combined with scanners to scan documents into a computer and convert the resulting information into textual data.

off-line – Pertaining to equipment or devices that are not in direct communication with the central processor of a computer system. Note: Off-line devices cannot be controlled by a computer except through human intervention. Contrast with *on-line*.

on-line – Pertaining to equipment or devices that are in direct communication with the CPU. On-line equipment includes readers, line printers, and terminals. In on-line processing, a user has direct and immediate access to a computer system via terminal devices.

OOP (Object Oriented Programming) – A programming concept that uses objects as the basic components of a program. Objects are modules that contain both data and the instructions/procedures that operate on the data. Examples of OOP are C++ and ADA.

operating system (O/S) – Software required to manage the hardware and logical resources of the system. Software that controls the execution of computer programs. An organized collection of routines and procedures for operating a computer. Functions performed include: (1) scheduling, loading, initiating, and supervising the execution of programs; (2) allocating storage; (3) initiating and controlling input/output operations; and (4) handling errors, etc.

operations manual – The manual that contains instructions and specifications for a given application. Typically includes components for operators as well as programmers. A log section may also be included.

optical scanning – A technique for machine recognition of characters by their images.

oscilloscope – Test instrument that displays electronic signals (waves and pulses) on a screen. It is used to test, analyze, and monitor communication lines.

OSI Model – Model for network communications developed by the International Standards Organization (OSI); identifies functional layers that are isolated by strict interface specifications.

output – A process of transferring data from internal memory to external storage or display. Reports and documents, or tape and disk files are typical examples of output media.

output area – The area of internal storage from which data is transferred to external storage.

overhead – Nonproductive processing that occurs when the operating system and programs are performing administrative tasks, but no production work.

overlay – A technique for bringing routines into memory from magnetic storage during processing, so that several routines will occupy the same storage locations at different times. Overlay techniques are used when the total storage requirements for instructions exceed available memory storage.

owner – The user who controls the access rights to a resource.

P

pack – To combine two or more units of information into a single physical unit to conserve storage.

packet switching – A data transmission method that routes packets along the most efficient path and allows a communication channel to be shared by multiple connections. User information is segmented and routed in discrete data envelopes called packets, each with its own appended control information for routing, sequencing, and error checking. It allows for more efficient use of communication channels.

page – In virtual storage systems, a fixed-length block of instruction, data or both, that can be transferred between real storage and external page storage; typically about 4 K bytes. A program is divided into pages to minimize the total amount of main memory storage allocated to the program at any one time. Paging, in virtual storage systems, is the process of transferring pages between real storage and external page storage. If a page is not transferred from auxiliary storage until it is actually needed, then paging is said to be done by demand.

parity – A method used by most of the computer industry to determine if data communications hardware has correctly sent and received data characters. All characters are specified as having either an even number of bits (even parity) or an odd number of bits (odd parity).

parity bit – A bit (binary digit) appended to an array of bits to make the sum of all the "1" bits in array either always even (even parity) or always odd (odd parity).

parity check – A check that tests whether the number of "1" bits in an array is even (even parity check) or odd (odd parity check). See also *row parity check*.

pass – One complete cycle in the execution of a computer program: input, processing, and output. For example, a one-pass compiler reads the source program, compiles it and writes the object program without intermediate input/output operations or human intervention.

password – A unique word or string of characters that a program, computer operator, or user must supply to satisfy security requirements, before gaining access to the system or data.

password protect – A programmed procedure that requires use of a code or access word in addition to normal open file or execute statements.

patching – Correcting or modifying a program in a rough or expedient way by adding new sections of coding. Too many patches in a program make it difficult to maintain. It may also refer to changing the actual machine code when it is inconvenient to recompile the source program.

peer-to-peer communications – Communications in which both sides have equal responsibility for initiating, maintaining, and terminating the session. Contrast with master-slave communications, in which the host determines which users can initiate which sessions. If the host were programmed to allow all users to initiate all sessions, it would look like a peer-to-peer network to the user.

peer-to-peer network – A communications network that allows all workstations and computers in the network to act as servers to all other users on the network. Dedicated file servers may be used, but are not required as in a client/server network.

peripheral equipment – The input/output units and auxiliary storage units of a computer system. (Note: The CPU and its associated storage and control units are the only parts of a computer system that are not considered peripheral equipment.)

physical layer – defines the mechanical, electrical, and procedural characteristics needed to establish, maintain, and release a physical connection. Examples of protocols at this level include RS232 and RS449.

point-to-point – Data flows between two points in a network.

polling – A teleprocessing procedure in which the telecommunications control unit determines if a terminal is ready to send or receive a message. When a computer polls, it asks each terminal in a predefined sequence whether it has any data to transmit. If the terminal has nothing to send it goes to the next terminal (node) in sequence. If a computer has something to send it temporarily suspends polling to receive the data, then resumes polling after the transmission is sent.

POS (Point Of Sale) – A system of terminals that debits a customer's account and credits a merchant's account to effect payment for purchases at retail establishments. For example, an authorized purchase usually causes a real-time debit entry to be made in the purchaser's account with a simultaneous credit entry in the merchant's account. These entries are recorded, not by paper, but by electronic signals flowing between the POS terminals and the respective accounts involved.

positive verification – A method of direct verification that requires a response from the customer. See *direct verification*.

post – Recording onto detailed subsidiary records (ledgers) amounts that have been originally recorded in records of original entry, such as deposit tickets, withdrawal slips, checks, debit or credit memoranda, blotters or journals.

post edit – To edit output data from a previous computation.

post-mortem routine – A diagnostic routine, often a dump, that is used after a program has failed to operate as intended.

PPP (Point-to-Point Protocol) – A protocol that allows a computer to connect to the Internet through a dial-in connection and enjoy most of the benefits of a direct connection, including the ability to run graphical front ends such as Mosaic and Netscape Navigator. PPP is generally considered to be superior to SLIP, because it features error detection, data compression, and other elements of modern communications protocols that SLIP lacks. Contrast with SLIP.

pre-edit – To edit input data prior to computation.

presentation layer – Transforms data from real terminal devices or application data generators into a standard terminal data stream. This layer also handles message compression and encryption.

preventive maintenance – Maintenance carried out to keep equipment in proper operating condition and to prevent faults from occurring during subsequent operations. A maintenance plan that is designed to prevent failures rather than correct malfunctions.

print server – A computer whose primary responsibility is to allow users to share a printer or printers. Documents to be printed are sent to a queue on the print server that then directs the job to the appropriate printer.

privilege – A special authorization that is granted to particular users to perform security relevant operations.

program – A sequenced set of instructions to a computer to do a particular job.

program compatibility – A characteristic enabling one computer system to execute programs written for another computer system and to obtain identical results. Note: Program compatibility can be achieved between two computer systems with similar instruction repertories and facilities, or by the use of emulators, simulators, translators, or coding in a common language, between dissimilar computers.

program flowchart – A flowchart diagraming the processing steps and logic of a computer program. Contrast with system flowchart.

program listing – A printout, usually prepared by a language translation, that lists the source language statements of a program.

program check – A check that is carried out by a series of instructions in a program.

programmer – A person who devises and writes programs in coding instructions such as COBOL. (Note: The term "programmer" is most suitably applied to a person who is mainly involved in formulating programs, particularly at the level of flowchart preparation. A person mainly involved in

the definition of problems is called an analyst, and a person mainly involved in converting programs into program code suitable for entry into a computer system is called a coder. In many organizations, all three of these functions are performed by programmers.)

programming – Preparing a list of instructions for the computer to use in solving a problem.

proof machine – A machine with multiple pockets that is designed to balance and encode debit and credit transactions, accumulate pocket and grand totals and sort the source documents according to their type (see batch proof). Single pocket proof machines prove the debits and credits of each transaction to itself and do not sort the source documents. This is generally done on high speed MICR reader/sorter equipment (see reader/sorter).

proof-of-deposit (POD) – A method that encodes items with machine-readable dollar amounts. The debits and credits are proven for each transaction and control totals are accumulated for use in subsequent processing.

protocol – A standardized set of rules that specify the format, timing, sequencing and/or error checking for data transmissions. A set of rules that define how computers communicate with each other.

prototyping – A methodology for building a model of what a finished system will look like without completing all stages of the systems development life cycle (SDLC). Prototyping often uses a 4GL language to develop prototype systems.

Q

query language – In data base management systems, a generalized language that allows a user to select records from a database. Query by example (QBE) and structured query language (SQL, pronounced sequel) are examples.

queuing – Method of providing for execution of jobs in a specific order, often according to priorities.

QTAM (Queued Telecommunications Access Method) – An extension of BTAM that includes all of the BTAM facilities but will not support synchronous communications. QTAM provides macro language for the control and processing of communication information including message editing, queuing, routing, and logging. It can schedule and allocate facilities, poll terminals, perform error checking routines, reroute messages, cancel messages, etc. QTAM is not used much because it has been replaced by TCAM.

R

raised check – A check on which the amount has been illegally increased. To deter checks from being raised, they are designed so that the amount is clearly shown in two places: 1) the amount of the check is written in numerical figures near the right margin and after the payees name; and 2) the check amount is either spelled out or protected by machine printing or perforation below the payees name.

RAM (Random Access Memory) – The generic term for read/write memory, memory that permits bits and bytes to be written to it as well as read from it, in any order or sequence. This type of memory is used for temporary information storage. Access to and from RAM memory is very fast. RAM requires electrical power to remember. Information in RAM is lost when the power is turned off.

random access – Pertaining to a storage device whose access time is not significantly affected by the location of the data to be accessed. (Note: Any item of data stored on-line can be accessed within a relatively short time (usually less than one second).) See direct access. Contrast with *serial access*.

raw data – Data that has not been processed or converted to machine-readable form.

reader/sorter – A high speed document handler that reads the MICR encoded information on documents for transmission to a computer and sorts the MICR documents on digits selected either at the unit console (off-line) or by the computer program (on-line).

real storage – In virtual storage systems, the storage of a computing system from which the central processing unit can directly obtain instructions and

data, and to which it can directly return results.

real-time – The processing of transactions on the computer as they occur rather than batching them for processing at a later time.

recap – An abbreviated term for recapitulation (or assembling) of totals for final bank settlement. All totals taken from batch proof sheets or from proof machines must be assembled in proper order so as to build up control totals for various departments charged with the items. Recap sheets may be used in all departments of the financial institution. All recap sheets are assembled into a final recap sheet for settlement of the entire financial institution.

reconcile – A process of accounting for the difference in two records by properly accounting for each outstanding item that, if posted, would bring the two records into agreement.

record – A collection of related data items. Note: In payroll processing, for example, an employee's pay rate forms a field, a set of all fields relating to a particular employee forms a record and a complete set of employee records forms a file. See also *fixed-length record* and *variable-length record*.

record count – A count of the number of records in a file or the number of records processed by a program. Note: Such a count is used in error control to detect the nonprocessing of records.

record gap – Same as *interblock gap*.

record layout – A diagram showing the size, position, and composition of data items making up a record. Note: Such a diagram is prepared during the preparation of a program.

record mark – A special character used in some computers either to limit the number of characters in a data transfer operation or to separate block records on tape.

redundancy check – A check based on the transfer of more bits or characters than the minimum number required to express the message itself; the added bits or characters have been inserted systematically for checking purposes. (Note: The most common type of redundancy check is a parity check.)

re-engineering – A process involving the extraction of components from existing systems and restructuring these components to develop new systems or to enhance the efficiency of existing systems. Existing software systems thus can be modernized to prolong their functionality. An example of this is a software code translator that can take an existing hierarchical data base system and transpose it to a relational data base system. CASE includes a source code re-engineering feature.

regeneration – The restoration of stored information.

relocate – In programming, to move a routine from one portion of internal storage to another and to automatically adjust the necessary address references so that the routine, in its new location, can be executed.

report file – A file containing transactions records and/or results of a data processing job.

report generation – A technique for producing complete machine reports from information that describes the input file and the format and content of the output report.

rerun – To make another attempt to complete a job by executing all or part of the process again with the same or corrected inputs.

rerun point – A point in a program where its execution can be re-established after an equipment failure or some other interruption. Note: Sufficient data is recorded at a rerun point to permit a restart from that point in the event of a subsequent interruption. Thus, the provision of rerun points at reasonable intervals can save computer time by making it unnecessary to rerun a program from the beginning whenever a run is interrupted.

resource – Any part of a computing system or operating system required by a job or task, including main storage, input/output devices, processing unit, data sets, and control or processing programs.

restart capability – Ability to reestablish the execution of a program whose execution has been interrupted by using restart points.

Rewritable (erasable disks) – are three and a half and five and one quarter inches in size. They are contained in cartridges and can be created (written to)

and then changed (erased) by users. Common technology for rewritable disks is magneto-optic technology. Such disks are used for documents that are frequently changed and updated.

ring topology – A network topology in which nodes are connected to a closed loop. Terminators are not required because there are no unconnected ends.

RISC (Reduced Instruction-Set Computer /Computing) – A computer architecture that reduces chip complexity by using simpler instructions. RISC compilers have to generate software routines to perform complex instructions that were previously done in hardware by CISC computers. The RISC chip is faster than its CISC counterpart and is designed and built more economically. Contrast with CISC.

RJE (Remote Job Entry) – Input of a batch job from a remote site and receipt of output via a line printer at a remote site. The technique allows various systems to share the resources of a batch oriented computer by giving the user access to centrally located data files and to the power necessary to process those files.

ROM (Read Only Memory) – A computer memory that stores permanent information. This information is constant and cannot be erased, or changed, or lost, even if electrical power is turned off. All PCs contain programs in ROM that execute when the power is turned on (*BIOS*).

router – A computer system in a network that stores and forwards data packets between LANs and WANs. Routers see the network as network addresses and all the possible paths between them. They read the network address in a transmitted message and can make a decision on how to send it based on the most expedient route (traffic load, line costs, speed, bad lines, etc.) Because routers have to inspect the network address in the protocol, they do more processing than a bridge and add overhead to the network.

routine – A set of instructions arranged in correct sequence that causes a computer to perform a particular process. Note: In this context, the term, routine is somewhat more precise than the general (and more commonly used) term program.

row – A horizontal arrangement of characters. See *frame*.

row parity check – A parity check performed on the bits in each row of a magnetic tape or punched tape. Synonymous with *lateral parity check.*

RPG (Report Program Generator) – A generator designed to construct programs that perform routine report-writing functions, such as programs that accept input data from magnetic tape or disk files and produce printed reports, often with headings and subtotals.

run – The single and continuous execution of a program by a computer using a given set of data.

run manual – A manual documenting the processing system and operating instructions associated with a computer run.

S

secondary storage – Synonymous with *auxiliary storage*.

security administrator – The person or group that has responsibility for the administration and management of the security mechanism.

security audit trail – Data collected and used to facilitate a security audit. A set of records that collectively provides documentary evidence of processing used to aid in tracing from original transactions forward to related records and reports, or backwards from records and reports to their component source transactions.

security mechanism – The technological and managerial safeguards established and applied to a data processing system to protect hardware, software, and data from accidental or malicious modifications, destruction, or disclosure.

security relevant event – Any event that attempts to change the security state of the system, such as change discretionary access controls, change the security level of the subject, change user password, etc. Also, any event that attempts to violate the security policy of the system, such as too many invalid attempts to logon, attempts to violate the

mandatory access control limits of a device, attempts to downgrade a file, etc.

selective dump – A dump of the contents of a set of storage locations specified by the user; for example, a dump of the storage locations occupied by a particular program or its data.

selector channel – A high-speed channel capable of one-way transmission. Selector channels operate in burst mode.

self-checking code – Same as *error-detecting code*.

self-checking number – An account number that contains redundant information (such as an appended check digit) permitting it to be checked for accuracy after it has been transferred from one medium or device to another. See *check digit.*

sense switch – A hardware switch on some types of computers that can be set by an operator and whose position can be sensed by a program instruction. Note: Such a switch can be used for programs that have alternate processing paths selected by the operator through the switch setting. A sense switch also may be a logical switch provided by the programmer to detect specific conditions.

sentinel – A character or symbol that signals a particular condition, such as the end of a file.

sequencing – The process of dividing a user data message into smaller frames, blocks, or packets for transmission, where each has an integral sequence number for reassembly of the complete message at the destination end.

sequence test – A process of checking the validity of the order in a series or rank or time.

sequential – In numeric sequence, normally in ascending order.

sequential processing – Processing from low order to high order in serial sequence.

serial access – Pertaining to a storage device in which there is a sequential relationship between the access times to successive location, as in the case of magnetic tape. Contrast with random access.

server – is one or more multi-user computer (back-end), usually a mainframe or a minicomputer, although it could be a PC. Server functions include any centrally supported role, such as file sharing, printer sharing, database access and management, communication services, facsimile services, application development, and others. Multiple functions may be supported by a single server.

session layer – performs bind/unbind processing; determines many characteristics of how the dialog between applications proceeds.

shareware – Computer programs from Electronic Bulletin Boards (EBBs) or other public sources for which developers ask the user to send money for registration, recompense, manuals, etc.

service charge – A fee charged by a bank for services rendered to a customer.

simplex channel – A channel that permits transmission in one direction only.

simulator – A software routine that is executed by one computer but imitates the operations of another.

slide – A term used in bookkeeping to describe a posting error by which an amount is wrongly recorded as a result of the bookkeeper unintentionally placing the decimal one or more digits to the right or left of the true decimal position. Example: posting $5.03 as $50.30, or as $503.00.

SLIP (Serial Line Internet Protocol) – A protocol that allows a computer to connect to the Internet through a dial-in connection and receive most of the benefits of a direct connection, including the ability to run graphical front ends such as Mosaic and Netscape Navigator. SLIP is also used to run TCP/IP over phone lines. Contrast with PPP. See also *TCP/IP*.

smart card – A device the approximate size of a credit card that contains an embedded microprocessor for storing information about an individual.

smart terminal – See terminal.

SNA (Systems Network Architecture) – IBM's mainframe network standards, introduced in 1974. Generically, the term refers to the description of the logical structure, formats, protocols, and operational

sequences for transmitting information units through, and controlling the configuration and operation of, networks.

snapshot – A dynamic dump of the contents of specified storage locations and/or register that is performed at specified points or times during running of a program.

software – A collection of programs (stored sets of instructions) that govern the operation of a computer system and makes the hardware run. Contrast with hardware.

sort – To arrange items in sequence or to segregate items into groups according to an aspect of their keys or certain rules. Note: Often keys are groups of numbers or letters, such as account numbers or employee names, and the sorting operation involves arranging the items so that keys of successive items are in numerical or alphabetical sequence. Sorting is one of the most common data processing operations.

source document – A document from which data is extracted and entered into a computer system; for example, a document that contains typed or handwritten data for data entry.

source language – A language that is an input to a translation process or in which a program is written. Contrast with *object language*.

source program – A computer program written in source language (for example, a program written in COBOL) or symbolic language that will be converted into an absolute language object program using a processor program.

spoofing – An attempt to gain access to a system by posing as an authorized user.

SPOOL (Simultaneous Peripheral Operation On-Line) – An application that manages print requests or jobs so that one job can be processed while other jobs are placed in a queue (an ordered list of items waiting to be processed) until the printer has finished with preceding jobs. Also called *print spooler.*

spooler – A program that intercepts data going to a device driver and writes it to disk. The data is later processed when the device is available. A spooler prevents output from different sources from being intermixed.

spooling – The process of temporarily storing print jobs while waiting for an available printer or port. Spooling jobs (tasks) frees system resources from waiting for a relatively slow device to provide output and keeps the contents of each print job separated from the contents of every other print job. Output to slow devices are put in "a waiting line" on mass storage devices to await transmission. In this way, more efficient use of the system is allowed since programs using low-speed devices can run to completion quickly and make room for others.

SQL (Structured Query Language) – Pronounced “sequel.” A query language developed by IBM that relies on simple English-language statements to perform database queries. Almost universally supported in one form or another by relational databases on platforms of all types, SQL allows databases from different manufacturers and on different types of computers to be queried using a standard syntax.

star topology – A network topology in which nodes are connected to a common device such as a hub or concentrator.

statement of account – A record prepared by a financial institution for the customer that details the activity and balance within the customer's account(s). The statement of account is usually accompanied by the deposit slips and canceled checks that correspond to the detailed activity.

statement of condition – A detailed listing of a financial institution's resources, liabilities and capital accounts showing its condition on a given date. On request (calls by state and/or federal supervisory authorities several times a year), financial institution's are required to submit sworn statements of condition. In general accounting, this type of financial report is known as a balance sheet and is actually a trial balance of all general ledger accounts. This record is also termed the Daily Statement of Condition.

steering committee – A management committee that establishes goals and objectives for the information systems (IS) and data processing function and allocates resources. Also monitors performance of the function through management reports.

storage – A device or portion of a device that is capable of receiving data, retaining it for an indefinite period of time, and supplying it on command.

storage dump – Same as *dump*.

storage protection – Protection against unauthorized writing in or reading from all or part of a storage device. Note: This protection may be implemented by using manually set switches or automatic hardware facilities, usually in connection with an operating system. Effective storage protection is vital in multi-programming and time-sharing systems both for ensuring privacy and for preventing concurrently operating programs from interfering with one another.

string – A connected sequence of characters, words, or other elements.

subroutine – Program segments that perform a specific function at any time in the program, thereby reducing programming and debugging labor.

supervisory state – One of the two general states in which a computer system executes instructions, the other being user state. Certain privileged instructions can be executed in the supervisor state that may bypass security mechanisms.

summation check – A check in which the sum of a group of digits is formed (usually without regard to overflow) and compared to a previously computed value called the checksum.

supervisor – Part of the operating system that organizes and regulates the flow of work in a computer system by initiating and controlling execution of programs.

supervisory routine – Same as *executive routine*.

support software – Programs that aid computer operations or programming or are an adjunct to application software. Examples of such software include: job accounting systems, automated tape library and scheduling systems, software librarian systems, and software providing access control over a telecommunications network.

surge protector – An inexpensive electrical device that prevents high voltage surges from reaching a computer and damaging its circuitry. See *UPS*.

symbolic address – An address that is expressed in symbols convenient for the programmer, but that must be translated, usually by an assembler, into absolute symbols before it can be interpreted by a computer.

symbolic coding – Coding that uses machine instructions with symbolic addresses. Note: The input to most assemblers is expressed in symbolic coding. Mnemonic operation codes are usually employed in addition to symbolic addresses to further simplify the coding process. A two-address instruction that subtracts an employee's taxes from his or her gross pay, for example, might be written SUB TAX GPAY. Contrast with *absolute coding*.

synchronization check – A hardware check that determines whether a particular event or condition occurs at the correct moment; for instance, whether the print hammers in a drum printer are activated at the moment when the appropriate character slugs on the drum are in correct position.

synchronous communications – A method of data communication in which the transmission of bits of data is synchronized by a clock signal. It requires the use of constant time intervals between events or occurrences when transmitting data. Synchronous communications sends data in parallel along a bus with each wire corresponding to one bit of information in a binary number. Start and stop bits are not required. Synchronous communication can be compared to sending eight cars side-by-side down a freeway. The cars travel together, and they arrive at the same time.

Synchronous Optical Network (SONET) – A standard being developed by the National Exchange Carriers Association. This is a standard for optical transmissions at a high rate of speed, usually in gigabits per second speeds.

system – A set (or arrangement) of components that form an organized whole. Note: This term is general and is applied to both hardware and software elements. Therefore, it is meaningful only when carefully qualified - for example, computer system, management information system, operating system.

system administrator – The person at a computer installation who is responsible for installing and maintaining system software.

system activity log – A system-generated report that details all communications between the operator and the system and between different parts of the system. The log also details all jobs run and files used.

system analysis – Examination of an activity, procedure, method, technique or business to determine what changes should be made and how they should be accomplished.

systems analyst – An individual who defines the application problem, determines system specifications, recommends equipment changes, and designs data processing procedures. This person also devises data verification methods and prepares block diagrams and records layouts from which the programmer prepares flowcharts and codes the programs. May assist in or supervise the preparation of flowcharts.

system configuration – (1) A specific set of equipment units interconnected and programmed to operate as a system; (2) the rules concerning the interconnection of available equipment units that collectively define the range of possible configurations in a particular computer system.

system design – The specification of the working relationships between all parts of a system in terms of their characteristic actions.

Systems Development Life Cycle (SDLC) – The stages through which software evolves from an idea to implementation. Although the names of the stages may vary, they usually are: feasibility, design (functional specifications, technical specifications), development (programming, testing), and implementation. These phases may vary depending on the complexity of the system being developed.

Systems Development Life Cycle Methodology (SDLCM) – The tasks, processes and deliverables associated with successfully completing each of the phases or stages associated with a system development project and documenting them.

system flowchart – A flowchart diagraming the flow of work, documents, and operations in a data processing application.

system library – A collection of data sets in which various parts of an operating system are stored.

system log – Report in which job-related information, operational data, descriptions of unusual occurrences, commands and messages to or from the operator are listed.

systems programmer – A programmer who plans, maintains, extends and controls use of an operating system to improve the overall productivity of an installation.

system utility programs – Programs supplied by the manufacturer to perform routine or special tasks. These programs are supplied as part of the manufacturers' software package.

T

tag – One or more characters attached to a particular item or record and used to identify that item or record. Note: The tag may be removed from the item or record by a simple operation, but it then loses its significance. Contrast with *key*.

TCAM (Telecommunications Access Method) – IBM communications software widely used to transfer data between mainframes and 3270 terminals. Contrast with *BTAM* and *QTAM*.

TCP/IP (Transmission Control Protocol/Internet Protocol) – A communications protocol developed for the U.S. Department of Defense to internetwork dissimilar systems. It is a de facto UNIX standard, but is supported on almost all computer systems. TCP/IP is the protocol of the Internet. TCP controls data transfer. IP provides the routing.

TCU (Telecommunications Control Unit) – A physical device that controls the terminal's activities and acts as an interface between the terminals and the central processor.

technical support group – Oversees systems development and serves as liaison between programming and IS operations. Usually consists of several systems programmers with high-level technical knowledge.

telecommunications – Data transmission between computing system and remotely located devices via telephone lines or microwave transmissions.

teller proof – A system of individual teller control where the teller balances and settles his or her own cash position daily. Teller proof consists of using the teller's starting cash total, adding his or her cash received, and subtracting his or her cash paid out, to arrive at cash on hand. The cash counted must agree with the ending cash total.

teleprocessing – The processing of data that is received from or sent to remote locations by way of telecommunications.

terminal – A keyboard/display or keyboard/printer device used to input programs and data into the computer and to receive output from the computer. A dumb terminal has no processing capability. A smart, or intelligent, terminal has some processing capability and, in some cases, a disk drive so that information can be downloaded.

test data generator – Software aid used for forming test data files by holding desired or randomly generated values in nominated fields of nominated records. Most effective if controlled by the record data definitions used in application programs so that fields can be identified by the same symbolic names, and test data can be recompiled in the same manner as programs, upon a change of field or record format.

test routine – A routine designed to test whether a computer is operating correctly.

third-party maintenance – Refers to various field engineering companies that offer contract maintenance and operation of computers not owned or leased by them for charges and fees commensurate with the system's size and complexity.

throughput – The total amount of useful work performed by a data processing system during a given period of time.

time-sharing – A method of operation in which the resources of a computer facility are shared by users via terminals for different purposes at (apparently) the same time. Although the computer actually services each user in sequence, the high speed of the computer makes it appear that users are all handled simultaneously. The user and the computer usually communicate by way of a higher level, easy-to-learn computer language.

topology – The arrangement of nodes usually forming a star, ring, tree, or bus pattern. Also called network topology.

trace routine – A diagnostic routine designed to check or demonstrate the operation of a program. Note: The output of such a routine usually includes some or all of the instructions (and their immediate results) in the program being checked, arranged in the sequence in which they are executed.

track – The part of a data storage medium that influences or is influenced by one head. For example, the ring-shaped portion of the surface of a drum associated with one nonmovable head or one of several (most commonly 7 or 9) divisions running parallel to the edges of a magnetic tape.

track parity check – Same as *longitudinal parity check.*

trailer record – A record that follows another record or group of records and contains data pertinent to the record or group of records.

transaction code – One or more characters that form part of a record and signify the type of transaction represented by that record. In inventory control, for example, a transaction code may signify deliveries to stock, disbursements from stock, order, etc.

transaction file – Same as *detail file*.

transit department – A department of a financial institution that processes checks drawn on other institutions (e.g., out-of-city or not-on-us items). The transit department prepares all transit check clearing letters and forwards these letters to the Federal Reserve bank, correspondent financial institutions, etc., for collection and payment.

transit items – Cash items that are drawn on financial institutions outside the immediate exchange or local forwarded clearinghouse area. These items are then processed and forwarded to Federal Reserve banks, correspondent financial institutions, etc., for collection and remittance to the financial institution that originally received the items.

transit letter – A deposit form or remittance instruction slip that describes and gives totals of items to be collected and paid, enclosed with checks

and other cash items. The term cash letter refers to transit items sent to a financial institution where the remitting institution maintains an account. A remittance letter is sent when payment must be made (usually by draft) for the items sent.

translator – A device or computer program that performs translations from one language or code to another; for example, an assembler or compiler.

transmission – Data is transmitted in one of three modes: Simplex, Half-Duplex, and Full-Duplex.

- Simplex – Data transmission occurs in one direction only.
- Half-Duplex – Transmission occurs in two directions but only in one direction at a time.
- Full-Duplex – Transmission occurs in both directions simultaneously.

transport layer – provides transparent transfer of data between sessions entities. This layer segments messages if necessary and implements flow control.

transposition – The unintentional reversal of two digits in a number.

trap – An unprogrammed jump to a particular location, activated automatically upon the occurrence of a particular condition. This may occur, for example, upon an attempt to execute an instruction that is not in the computer's instruction repertoire. Note: The point where the jump occurs is recorded, so that normal execution of the program can be resumed after the faulty condition has been corrected.

trapdoor – A concealed and unauthorized entrance into a computer operating system. The programmer who designs and installs the trapdoor would have the opportunity to enter a system, take control of it, and by-pass any standard safeguards installed for audit control purposes.

tree topology – A network topology in which nodes are connected by cables to a trunk cable with a central retransmission facility.

trial balance – Listing the balances of all accounts within a given control or ledger and proofing it to the control total established over the group of accounts affected. Trial balances of bookkeeping department ledgers are usually taken at least once a month. The daily statement of condition (see definition) is, in effect, a daily trial balance of the general ledger.

troubleshoot – Same as *debug*.

TSR (Terminate-and-Stay-Resident) – A memory resident program that remains active in memory when other programs are running. It is not visible until you press a certain key combination or until a certain event occurs. A typical example is a screen saver program that will activate after a certain time period, or if the user presses a certain key combination. Also called memory resident or pop-up program.

turnaround – The time elapsed between submission of a job to a computer center and when results are returned.

twisted pair cable – A wiring scheme with one or more pairs of 18 to 24 gauge copper strands. The strands are twisted to improve protection against electromagnetic and radio frequency interference. Cable may be either shielded or unshielded.

U

uncollected funds – The portion of a deposit or deposit account that has not been collected or paid because the items deposited are en route to the drawee financial institution for payment. Checks drawn against uncollected funds will not usually be paid by a financial institution until it knows that the deposit account is fully available and that all deposits are fully collected. See also *kite*.

update – Pertains to a procedure used to modify a master file with current information.

UPS (Uninterruptible Power Supply) – Backup power used when the electrical power fails or drops to an unacceptable voltage level. Small UPS systems provide battery power for a few minutes; enough to power down the computer in an orderly manner. Sophisticated systems are tied to electrical generators that can provide power for days. A surge protector filters out surges and spikes, and a voltage regulator maintains uniform voltage during a brownout, but a UPS keeps a computer running when there is no

electrical power. UPS systems typically provide surge suppression and also may provide voltage regulation.

UPPER CASE – A term to describe CASE software that automates early stages of software development (planning, design, and analysis). These tools are newer and not as prevalent as lower case tools or traditional programmer productivity aids.

user manual – Written instructions documenting the responsibilities and procedures to be followed in processing data and transactions on the computer system for an individual department or user area.

user – In information security, the entity, human or machine, that is identified by the logon ID, authenticated prior to system access, the subject of all access control decisions, and held accountable via the audit reporting system.

utility program – A specialized program that assists in the operation of a computer by performing a frequently required process, such as sorting, merging, report program generation, data transcription and file maintenance. Note: Utility programs are usually supplied by the equipment manufacturer.

V

validity check – A hardware check that determines whether or not a particular character is a legitimate member of the permissible character set.

variable-length record – A record that may contain a variable number of characters. Contrast with fixed-length record.

vendor – A company that supplies resources and materials, e.g., computer equipment, software packages.

verify – To determine whether a data transcription or data transfer operation is accomplished accurately.

virtual storage – Process by which a program is divided into segments called pages. Only the segment actually being executed will be resident in core at any given time; the balance of the program is stored on a direct-access medium to be used as needed.

virtual address – The immediate address or real-time address.

virus – A computer program that embeds itself in other code and can replicate itself. Once active, it takes unwanted and unexpected actions that can result in either nondestructive or destructive outcomes in the host computer programs.

VM (Virtual Machine) – An IBM mainframe operating system, originally developed by its customers and eventually adopted as an IBM system product (VM/SP). It can run multiple operating systems within the computer at the same time, each one running its own programs.

VSE (Disk Operating System/Virtual Storage Extended) – An IBM multiuser, multitasking operating system that typically runs on IBM's 43xx series. It used to be called DOS, but due to the abundance of DOS PCs, it is now referred to as VSE.

VTAM (Virtual Telecommunications Access Method) Also called ACF/VTAM (Advanced Communications Function/VTAM), software that controls communications in an IBM SNA environment. It usually resides in the mainframe under MVS or VM, but may be off-loaded into a front-end processor that is tightly coupled to the mainframe. It supports a wide variety of network protocols.

volume – A tape or a disk used for data storage. A file may include one or several volumes. See *file*.

W

WAN (Wide Area Network) – A communications network that covers a wide geographic area, such as state or country, using high speed long distance lines or satellites provided by a common carrier. A LAN (local area network) is contained within a building or complex, and a MAN (metropolitan area network) generally covers a city or suburb. See *LAN* for detail.

wideband – Generally, a communications channel offering a transmission bandwidth greater than a voice-grade channel; data transmission speeds on wideband facilities are typically in excess of 9.6 kbit/s and often at rates of 56 kbit/s and 1.544 Mbit/s.

window – An unauthorized entrance into a computer operating system. See *trapdoor*.

word – A group of bits or bytes treated as a unit and capable of being stored in one storage location.

working storage – A computer storage area set aside by a programmer for various uses including developing processing results, storing constants, and temporarily storing results needed later in the program sequence.

WORM (Write Once, Read Many) disk – A type of disk used extensively in records management applications. The disks are in four sizes (three and a half: five and a quarter; 12 and 14 inches). The disks are blank when purchased, and are written to by users with appropriate hardware and software. Once information is incorporated into a WORM disk with a laser, it cannot be altered or erased. However, authorized employees can add to the document, and the system can be programmed to explain what was added to the document. The WORM disks can be read thousands of times without deteriorating.

WWW (World Wide Web) – A collection of richly formatted hypertext "pages" located on computers around the world and logically linked together by the Internet. With a graphical Web browser such as Mosaic or Netscape Navigator, users can"surf" the Web by clicking highlighted words on the screen. Each click activates a hypertext link, connecting the user to another Web location.

WYSIWYG (What You See Is What You Get) – Pronounced wissywig or wizzywig. Refers to the ability to display a close representation of the printed page on the computer screen.